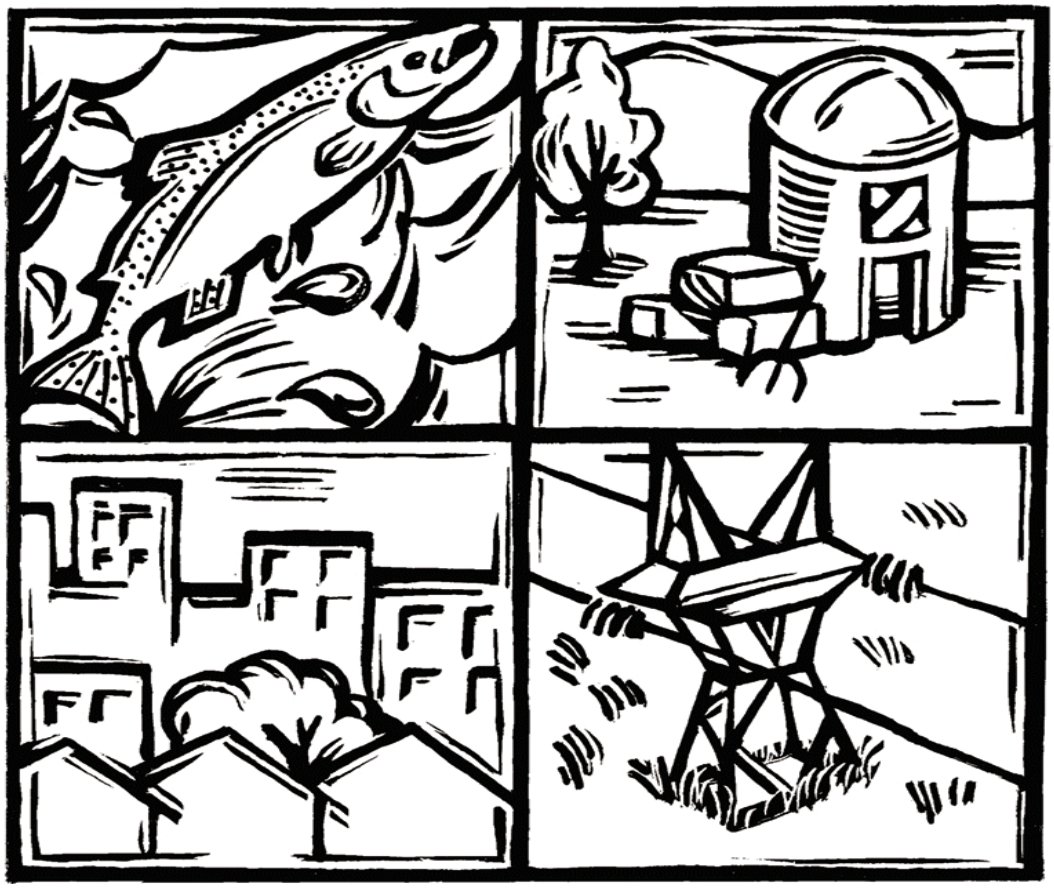
CENTRAL VALLEY PROJECT IMPROVEMENT ACT ACCOMPLISHMENT REPORT

FISCAL YEAR 1999



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FISCAL YEAR 1999

U.S. Department of the Interior
Bureau of Reclamation
Fish and Wildlife Service

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INTRODUCTION

Water has always been and will always be the life blood of California. The ability to harness and transport water has helped California become the seventh largest economy in the world and support more than 32 million people. This precious, renewable resource is not only essential to sustaining life, but is responsible for much of California's economic prosperity. Water can determine the ability of a region to thrive or even survive. It has become clearer that large water projects are no longer the answer to California's water problems. Economic factors and changing environmental and public values have made such projects less feasible. Public sentiment has embraced environmental values and there is now more concern about instream water quality, aesthetic and recreational uses, and the role of water in managing unplanned urban growth.

The Central Valley Project Improvement Act (CVPIA) addressed the importance of the Central Valley Project (CVP) in California's water resources and made significant changes in the policies and administration of the CVP. The CVPIA redefined the purposes of the CVP to include protection, restoration, mitigation, and enhancement of fish, wildlife and associated habitats, and protection of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. The CVPIA seeks to achieve a reasonable balance among competing demands for use of CVP water, including the requirements of fish and wildlife, and agricultural, municipal, industrial, and power contractors.

Since passage of the CVPIA, numerous environmental restoration measures have been implemented. These measures include modification of CVP operations; management of water dedicated to the environment; increased water deliveries to wildlife refuges; installation of fish screens on water diversions; construction of a temperature control device at Shasta Dam to aid Sacramento River chinook salmon; and numerous other fish, wildlife, and habitat restoration efforts. To date, more than $321,153,000 has been spent on environmental rehabilitation projects.

While moving forward with implementation of the CVPIA, the Department of the Interior (Interior) continues to work closely with stakeholders and the interested public to identify the best ways to achieve the purposes of the Act. Sections of the CVPIA focused on by Interior, stakeholders, and the public include: management of 800,000 acre-feet of CVP yield for the environment; the Anadromous Fish Restoration Program (AFRP), providing reasonable efforts to at least double natural production of anadromous fish in Central Valley rivers and streams; the Restoration Fund; urban water reliability; water transfers; refuge water supplies; restoration of the San Joaquin, Trinity, and Stanislaus rivers; and the stakeholder process.

The general purposes of the CVPIA, identified by Congress in Section 3402, are as follows:

(a) To protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins of California;

(b) To address impacts of the CVP on fish, wildlife, and associated habitats;

(c) To improve the operational flexibility of the CVP;

(d) To increase water-related benefits provided by the CVP to the State of California through expanded use of voluntary water transfers and improved water conservation;

(e) To contribute to the State of California's interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; and

(f) To achieve a reasonable balance among competing demands for use of CVP water, including the requirements of fish and wildlife, agriculture, municipal and industrial and power contractors.

The CVPIA identified a number of specific measures to meet these new purposes and directed the Secretary of the Interior (Interior) to operate the CVP consistent with these purposes to meet Federal trust responsibilities to protect fishery resources of federally recognized Indian tribes, and to meet all requirements of Federal and California law.

To achieve cooperation with other related efforts, Interior developed extensive partnerships with local, State of California (State) and other Federal agencies, and private groups. These partnerships include participation in various programs and actions that were either formed specifically to carry out the CVPIA mandates or affect its implementation in some way. Concurrent efforts effecting implementation of the CVPIA include the Coordinated Operation Agreement, the Bay-Delta Accord, and CALFED Bay-Delta Program (CALFED).

A significant factor in implementation of the CVPIA is its linkage and alignment with CALFED. CALFED's actions have the same or similar objectives and address most of the same natural resources and water management problems as actions under the CVPIA. As implementation of these programs proceed, close coordination and a focus on functional integration will be necessary to achieve common goals and avoid duplication. To ensure coordination in the prioritization of fund expenditure and implementation of CVPIA projects, Interior has worked extensively with CALFED and stakeholder groups. An example of this coordination is Interior's effort to have CALFED provide "expert level" review and comment on proposed CVPIA programs and actions. This review is expected to help lead to a more broad-based ecosystem management strategy that more effectively addresses fish and wildlife mitigation, restoration, and enhancement.

FUNDING SOURCES

Restoration Fund

Section 3407 of the CVPIA establishes the "Central Valley Project Restoration Fund" (Restoration Fund) to assist the Secretary of the Interior in carrying out programs, projects, and plans; including habitat restoration, improvement, and acquisition, established as a result of provisions of the CVPIA. Revenues for the Restoration Fund are derived through collections of pre-renewal charges (Section 3404 (c)(3)), tiered water rates (Section 3405 (d)), transferred water rates (Section 3405 (a)(1)(B)), Friant surcharges (subsection 3407 (d)(2)(A)), and additional mitigation and restoration payments by water and power beneficiaries (Section 3407 (c)).

In 1992 the Restoration Fund was established in the Treasury of the United States for deposit of revenues associated with contributions, payments, and charges required to be

made by the CVPIA. Separate fund codes were set up to identify the different types of payments received, as well as fund codes to track expenditures for provisions under the CVPIA.

While most funding for CVPIA projects comes from the Restoration Fund, a number of the projects have been co-funded or entirely funded from Reclamation's Water and Related Resources appropriation account.

In 1993, interim guidelines were developed for calculation, assessment, and collection of revenues and surcharges under Restoration Fund provisions of the CVPIA. These interim guidelines are being used in the administration and collection of these restoration funds. Presently, rules and regulations are being written on the Restoration Fund, and once finalized, will replace the guidance provided in the interim guidelines.

Cost Sharing Agreement With The State of California

Section 3406(h) of the CVPIA requires the Secretary of the Interior to enter into a binding cost-share agreement with the State for the implementation of specific restoration actions within the Act. A State-Federal master cost-share agreement for CVPIA implementation was signed by Regional Directors of Reclamation and the Service, and Directors of the California Department of Water Resources (CDWR) and California Department of Fish and Game (CDFG) on June 27, 1994. The agreement included provisions on the term, scope, cost-sharing principles, task orders, budgeting/funding, and coordination of 16 restoration actions identified in the agreement as subject to cost-sharing.

The State and Interior negotiated task order agreements pursuant to the June 27,1994, Master Agreement, including:

Shasta Dam Temperature Control Device	Section 3406 (b)(6)
Red Bluff Diversion Dam	Section 3406 (b)(10)
Glenn-Colusa Irrigation District Fish Screen	Section 3406 (b)(20)
Contra Costa Canal Fish Screen	Section 3406 (b)(5)
Anadromous Fish Screening Program	Section 3406 (b)(21)
Restoration of Spawning Gravels	Section 3406 (b)(13)
Anderson-Cottonwood Irrigation District Fish Passage	Section 3406 (b)(17)
Clear Creek Restoration	Section 3406 (b)(12)
San Joaquin Basin Action Plan	Section 3406(d)(3)

A large portion of the State's cost-share funding was raised through the State bond process. In 1996 State Senator Jim Costa introduced Senate Bill 900 (SB 900), the *Water Resources and Delta Restoration Act of 1996*, as amended, which was later approved by voters providing funds for water projects, facilities, and programs in California. Included in SB 900 was a provision for $93 million to be allocated to pay the State's costs for fish and wildlife restoration measures required by the CVPIA. Of the $93 million, $60 million was raised through the State bond process. At this time, task orders have been written and State cost share money received on the following projects: Shasta Dam Temperature Control Device, Red Bluff Diversion Dam, Glenn-Colusa Canal Fish Screen, Anadromous Fish Screening Program, Restoration of Spawning Gravels, Anderson-Cottonwood Irrigation District Fish Passage, and Clear Creek Restoration. .

SUMMARY

During fiscal year (FY) 1999, approximately $73,000,000 was obligated from Federal and State appropriations by the Bureau of Reclamation (Reclamation) and the Fish and Wildlife Service (Service) to implement the CVPIA. To date over $394 million has been obligated. To help identify the best ways to effectively and efficiently implement provisions of the Act, Interior is working closely with other programs like CALFED, stakeholder groups, and the interested public.

FY 1999 PROGRAM ACTIVITIES

The following provides a general overview of CVPIA activities and accomplishments in FY 1999:

Project Title: Anadromous Fish Restoration Program
CVPIA Section 3406(b)(1)
FY 1999 - $6,797,000

FY 1999 Accomplishments

An Anadromous Fish Restoration Program (AFRP) website was established in FY 1999 (www2.delta.dfg.ca.gov/afrp/), providing information on the status and benefit of program supported on-the-ground work, planning, research, monitoring, and educational outreach.

On-the-Ground Work

In FY 1999, plantings and natural regeneration resulted in successful restoration of the Runyon site on Mill Creek, an area left void of vegetation following repairs to an irrigation ditch after the January 1997 flood. This restoration will improve habitat conditions for fall- and spring-run chinook salmon and steelhead in Mill Creek.

Approximately 5,700 cubic yards of gravel were placed primarily in the upper portion of the 10-mile spawning reach downstream of Camanche Dam on the Mokelumne River. Results of this placement and associated evaluations indicate enhanced gravel sites have a higher intergravel permeability and dissolved oxygen levels, and lower temperature than adjacent unenhanced sites. This gravel restoration work will improve spawning capabilities and associated survivorship of fry for fall-run chinook salmon and steelhead in the Mokelumne river.

Planning

Planning efforts focused on continued support of watershed management groups and teams established earlier throughout areas of the Central Valley. With the help of these groups, and the solidification of funding partnerships with other entities like CALFED, AFRP stepped up to complete evaluations and documentation essential to begin anadromous fish restoration projects. Scattered throughout the Valley, these numerous planning processes included such efforts as developing stakeholder input and consensus for restoration projects implemented in the area between and including the Butte Sink and the Sutter Bypass at Sacramento Slough under the Lower Butte Creek Project.

The AFRP continued to assist development of locally-led restoration planning efforts on the Merced River. The AFRP helped local landowners and stakeholders by facilitating the

development of a self-sustaining broad-based, local stakeholder group and technical advisory committee for the Merced River watershed.

On the Tuolomne River, the AFRP through previous funding, helped to complete a joint programmatic Environmental Assessment and Initial Study (EA/IS) environmental document for all four segments of the Ruddy Mining Reach Project. The first year of fisheries pre-project monitoring has been completed and will be available as a draft report in 2000.

Research, Monitoring, and Educational Outreach

Several research and monitoring efforts were initiated or continued to help assure that Interior's implementation efforts are as effective and efficient as possible. Without these types of efforts, the appropriate adaptive management of CVPIA implementation would not be possible. Such efforts included studies to genetically identify and evaluate the extent and population size of listed anadromous fish species, placement of real-time flow monitors into rivers and streams in a effort to provide the most accurate and timely flow data to help determine our actions, and scattered environmental studies to help evaluate such things as spawning gravel availability and utility, and overall floodplain dynamics.

The identification of instream flow requirements for anadromous fish continued in many streams of the Central Valley. These instream flow studies on the Sacramento, American, and Merced rivers developed flow/habitat relationships for all life stages of fall-, late fall-, spring-, and winter-run chinook salmon inhabiting the Sacramento River. This information will be provided to the Central Valley Anadromous Fish Restoration Program to be used in conjunction with other available information in formulating comprehensive instream flow recommendations.

To determine the effectiveness of the hatchery supplementation program, assist in the maintaining genetic diversity in hatchery and natural stocks, and to evaluate the effectiveness of the winter-run chinook salmon propagation program, monitoring continued on the upper mainstem Sacramento River and Battle Creek to estimate escapement of hatchery-produced and wild-origin chinook salmon.

A program sponsored report was released by the State, *Butte Creek Spring-run Chinook Salmon* (*Oncorhynchus tshwaytscha*) *Juvenile Emigration and Life History Study, 1995-1998,* Katherine A. Hill and Jason D. Webber, California Department of Fish and Game, Inland Fisheries Administrative Report No. 99-5. This report provides support for future program-related decisions on the restoration of chinook salmon and steelhead in Butte Creek.

The use of twenty-six upper mainstem Sacramento River tributaries for non-natal rearing of chinook salmon juveniles was documented in FY 1999, resulting in estimates of between 100,000 and 1,000,000 individuals. This research identifies valuable chinook salmon rearing habitat and allows the program to direct riparian acquisitions for its protection.

In an effort to provide outreach to local communities, AFRP continues to fund programs focused at stakeholder groups, school age children, and the general public. This effort, is essential to assure the long-term survival and recovery of anadromous fish species in California's Central Valley. Specific educational efforts by the AFRP included funding the "Adopt-A-Watershed" training for teachers in San Joaquin County. Curriculum for the

“Adopt-A-Watershed” program was also purchased and placed in the classrooms of the trained teachers.

Project Title: Habitat Restoration Program
CVPIA Section 3406(b)(1) "Other"
FY 1999 - $1,517,000

FY 1999 Accomplishments

In FY 1999, ten conservation activities were funded by the Habitat Restoration Program. Four of these projects provided additional funding for projects that had been initiated in previous years. This included additional funding for a historical trend analysis of habitat changes throughout the Central Valley from the early 1900's to the present.

Additional funding was provided towards recovery of the federally listed riparian brush rabbit. This year, funds were provided to initiate a captive breeding program. The goal of this program is to eventually translocate rabbits to suitable sites within their historical range in the Central Valley. Stabilization of a small earthen dam in El Dorado County was completed to protect one of two known populations of the red-legged frog, now proposed for listing.

The Habitat Restoration Program contributed funding towards the acquisition of four different parcels of land. Funding was provided to The Nature Conservancy to assist in the protection and acquisition of vernal pool, oak savanna, and riparian habitat on the 13,000 acre Howard Ranch located in the Cosumnes River watershed, Sacramento County. Protection of this area will benefit the federally-listed giant garter snake, vernal pool fairy shrimp, vernal pool tadpole shrimp, and peregrine falcon. This project will contribute towards The Nature Conservancy’s efforts to protect and restore the lower portion of the Cosumnes River watershed. The Nature Conservancy also received supplemental funds to complete their acquisition of 60,000 acres of grassland and oak savanna habitat in Stanislaus, Santa Clara, and Merced counties.

Listed vernal pool species will also benefit from a partnership acquisition with the Sacramento Valley Open Space Conservancy within the Urban Services Boundary of South Sacramento County. The goal of the Sacramento Valley Open Space Conservancy is to establish a 2,000-3,000 acre vernal pool preserve in this area. CVPIA funding will help contribute towards this effort. Over 700 acres supporting high density vernal pool habitat is also being protected through an acquisition with the Four Creeks Land Trust, Tulare County.

The Habitat Restoration Program partnered with the CVPIA Land Retirement Program to acquire 2,645 acres of alkali sink habitat and formerly cultivated land located on the southern extreme of the historic Tulare Lake freshwater marsh in Kings County. Acquisition and subsequent restoration of this property will benefit the federally listed blunt-nosed leopard lizard, San Joaquin kit fox, Tipton kangaroo rat, and several species of concern, including burrowing owl and western snowy plover.

Development of a vernal pool poster was funded to provide an important educational tool for schools and the general public to help them gain a better understanding of the unique and important characteristics of this habitat type. Public support for protecting vernal pools is necessary for the recovery of federally-listed vernal pool species.

Project Title: San Joaquin River Riparian Habitat Restoration Program
CVPIA Section 3406(b)(1) "Other"
FY 1999 - $1,070,000

FY 1999 Accomplishments

In FY 1999, a draft plan was completed on riparian restoration opportunities for the San Joaquin River between the City of Firebaugh and Mendota Pool and a cooperative agreement was entered into that provides funding to the National Park Service Rivers, Trails and Conservation Assistance Program for development of an extensive public outreach plan to further this effort. In addition, a cooperative agreement was executed to provide funds to the CDWR to identify locations, condition, and extent of areas with recent recruitment of native riparian vegetation; to investigate survivorship of recently established riparian vegetation; to evaluate the age class distribution of the riparian forest; to identify the location and extent of non-native, invasive plant species; and to evaluate the potential for natural establishment and survivorship of native riparian vegetation under existing hydrological conditions. GIS will be used to classify areas with different levels of restoration potential for a variety of different conditions and restoration actions.

A hydraulic and sediment continuity model was developed for the San Joaquin River between Friant Dam and the Mendota Pool and a contract was awarded for completion of the same model for the area between Mendota Dam and the Mariposa Bypass. These hydraulic models, along with a contract for completion and integration of a Groundwater Model, will prove integral for successful riparian restoration. A contract was awarded to develop a public outreach and implementation plan for riparian restoration in the project area.

Project Title: Dedicated Project Yield
CVPIA Section 3406 (b)(2)
FY 1999 - $939,000

FY 1999 Accomplishments

Administrative tasks necessary for proper management and accounting of the water dedicated under this section began in 1994 as part of a long-term water management planning effort. Considerable debate occurred over interpretation of Section 3406 (b)(2), primarily regarding how the water may be used and how it should be accounted. Interior's *Proposed Decision on Implementation of Section 3406(b)(2) of the Central Valley Project Improvement Act*, was released on July 15, 1999. The Decision and accompanying attachments set out a calculation of CVP yield, the method of accounting for use of the dedicated CVP yield, procedures for management of the yield, and lists potential fishery measures which may be prescribed by the Service.

Interior released the Proposed Decision on July 15, 1999, and asked for comments to be submitted by August 16, 1999. At the request of Governor Gray Davis, the State was granted an extension of time to September 23, 1999, allowing for continued coordination and consultation. Comments from agricultural, urban, environmental and power users were analyzed.

In FY 1999, litigation was filed in the United States District Court challenging the manner in which the United States Department of the Interior sought to implement section 3406 (b)(2) of the CVPIA. The litigation, involving agricultural water users (including the San Luis & Delta-Mendota Water Authority) and environmental water users (including Save San Francisco Bay Assoc.) versus the U.S. Department of the Interior, continued with a closing brief to Judge Wanger on September 14, 1999. As part of the administrative record, an accounting of (b)(2) water management was estimated for FY 1999.

Project Title: Water Acquisition
CVPIA Section 3406(b)(3)
FY 1999 - $4,375,000

FY 1999 Accomplishments

During FY 1999, Reclamation and the Service continued to coordinate the identification of priorities for the acquisition of water for anadromous fish and the development of a long-term plan for the acquisition of Level 4 refuge water supplies. Working with the Service, Reclamation evaluated options associated with acquisition of water to meet high-priority fish and wildlife restoration and enhancement objectives.

The Water Acquisition Program (WAP) continued efforts to provide the annual Level 4 refuge water supplies and to ensure adequate flows for emigration, migration, holding, spawning, and rearing habitat for anadromous fish on the San Joaquin River tributaries and Battle Creek.

A major effort in 1999 involved the acquisition of water on behalf of CALFED. This enabled acquisition of 50,000 acre-feet from the Oakdale and San Joaquin Irrigation Districts, primarily benefitting steelhead on the Stanislaus River and possibly resulting in additional flexibility for the State and Federal Projects.

A summary of 1999 water acquisitions and their purposes is provided in the following table.

DATE	SELLER	QUANTITY (acre-feet)	PURPOSE
10/98-9/99	Pacific Gas & Electric Company	13,025	Anadromous Fish Benefits - Executed a 3-year agreement extending improved year round flows in Battle Creek for spawning and migration.
4/99	San Joaquin River Group Authority	110,000	Anadromous Fish Benefits - To help meet 31-day pulse flow at Vernalis in April-May in support of VAMP.
4/99	Oakdale Irrigation District	15,000	Anadromous Fish Benefits - Improved flows on Stanislaus River during April-May in support of VAMP.

DATE	SELLER	QUANTITY (acre-feet)	PURPOSE
5/99	San Joaquin River Group Authority	37,500	Anadromous Fish Benefits - To supplement existing flows, including 110,000 acre-feet stated above, at Vernalis during April-May in support of VAMP.
7/99	Oakdale & South San Joaquin Irrigation Districts	50,000	Anadromous Fish Benefits - Improved temperature conditions for steelhead on Stanislaus River during July-September.
4/99	San Joaquin River Exchange Contractors	20,000	Wildlife Refuge Benefits - Provide Level 4 Refuge Water Supplies for San Joaquin Valley managed wetlands.

Project Title: Tracy Pumping Plant Mitigation Program
CVPIA Section 3406(b)(4)
FY 1999 - $2,255,000

FY 1999 Accomplishments

The Tracy Fish Facility Improvement Program (TFFIP) is identifying and will be making physical improvements and operational changes, assessing fishery conditions, and monitoring salvage operations at the Tracy Fish Collection Facility (TFCF), per agreements with CDFG in 1992 and Section 3406(b)(4) of the CVPIA. Research and evaluation efforts have included predator removals, louver efficiency estimates, holding tank surveys, evaluation of biology and movement of local native species (i.e., splittail), secondary louver netting, water quality monitoring, egg/larval density studies, improved fish handling, and improved fish identification. Facility improvements included new fish hauling trucks, new louver cleaner rakes, predator removal screens, improved instrumentation, and surface painting of holding tanks to minimize fish abrasion. In FY 1999, the program was expanded to initiate activities leading to development of a modern on-site fishery evaluation and testing facility that will provide new technology for a new facility or a major retrofit of the old facility.

The following activities took place during the fiscal year:

- A report on louver efficiencies was completed, peer-reviewed, and distributed. (*Vol. 8 of Tracy Series*)
- A report on the assessment of methods for fish salvage estimation was completed, peer-reviewed, and distributed. (*Vol. 7 of Tracy Series*)
- New on-site fish holding/rearing facilities were completed and now hold splittail for research
- A “Fish Friendly” test pump, holding tanks, and associated piping were assembled on-site

- A "Real Time Monitoring" report on egg and larval fish entrainment is 90% complete
- Completed initial tests on the use of traveling screens to remove debris from fish
- A new "fisheries engineering lab flume" was completed to test new screening concepts for Tracy
- Completed refurbishing and upgrading fish holding facilities in Denver that will test Tracy lab screens/louver combinations
- Completed preliminary draft concepts for construction of an on-site Tracy experimental facility, and feasibility report is 90% complete
- A report on splittail behavior around the Tracy Fish Facilities is approximately 80% complete

Project Title: Contra Costa Pumping Plant Mitigation Program
CVPIA Section 3406(b)(5)
FY 1999 - $10,000

FY 1999 Accomplishments

In FY 1999, plans and specifications for the preferred alternative of the Contra Costa Pumping Plant Mitigation Program were completed. Most technical and policy issues were successfully resolved by the Technical and Management Teams. The Peer Review Teams reviewed preliminary conceptual designs and offered recommendations on how the fish screen project could be improved, especially in regard to debris handling issues. The Value Engineering Team explored cost-saving alternatives and made recommendations. The EA/IS was completed and a Finding of No Significant Impact (FONSI) and a Negative Declaration (Neg Dec) were issued. Most of the necessary permits were obtained. Legal descriptions and plat maps of temporary and permanent easements were completed. The purchase of temporary easements are proceeding and a Task Order was prepared to facilitate funding participation by the State of California.

The following actions were completed during the fiscal year:

- Completed 50% design review
- Completed 95% of the design report and drawings
- Completed an *Environmental Commitment Report*
- Completed the *Screen Structure Model Testing - Draft Report*
- Completed the *Screen Rake Model Testing - Draft Report*
- Completed an Endangered Species Act consultation and coordination meeting
- Acquisition of permanent and temporary easements is being pursued

Project Title: Shasta Temperature Control Device
CVPIA Section 3406(b)(6)
FY 1999 - $1,980,000

FY 1999 Accomplishments

Construction of the Shasta Temperature Control Device (TCD) is complete and it is being utilized to conserve cool water while generating power through the powerhouse. Efforts continued in FY 1999 on the resolution of outstanding contract issues with the construction contractor. All outstanding issues were resolved and the close-out of the construction contract was completed in February, 1999. The final contract value was $70,410,783.

In FY 1999, various stipulations required to transfer the project from construction to Operations and Maintenance (O&M) were completed and the project was transferred to O&M status.

Work on the one year underwater inspection report was finalized in FY 1999 and no additional concerns or items were identified. A computer modeling study was performed and a report summarizing the findings was finalized in October of 1999. The purpose of the modeling effort is to optimize cold water storage by calculating release temperatures based on TCD open gate positions, forebay temperature profiles in the reservoir, penstock discharge, and reservoir water levels. The computer model was determined to be an accurate tool for predicting the release temperatures.

Work on the reservoir limnology study continued in FY 1999. The collection of data to evaluate any effects of TCD operation is ongoing.

Project Title: Eliminate Flow Fluctuation Losses and Reevaluate Criteria for Shasta and Trinity Carryover Storage
CVPIA Section 3406(b)(9 & 19)
FY 1999 - $174,000

FY 1999 Accomplishments

3406(b)(9) - The CDFG is conducting a literature review and field investigations for incorporation in a report with recommended operating criteria. A working group continues to meet regularly to discuss both American River operations and efforts to determine threshold flows and ramping rates required to protect the Lower American River fishery resources. Field investigations pursuant to a Cooperative Agreement with CDFG were completed in March of 1999, and a requisition has been submitted for a similar agreement and investigation on the Stanislaus River.

3406(b)(9)

- The American River Working Group met regularly to provide oversight on continuing investigations and coordination of 1999 operations.

- The field investigations continued pursuant to the Cooperative Agreement with CDFG.

- American River operations were coordinated and interim operating criteria were implemented to avoid, to the extent possible, losses of anadromous fish due to flow fluctuations.

3406(b)(19) - Reevaluation of carryover storage has been a part of studies being conducted for the dedication and management of project yield (3406(b)(2)). Those studies have considered downstream flow and habitat needs and project deliveries in conjunction with temperature control. At the same time, the Shasta and Trinity River Division facilities have been operated for temperature control.

3406(b)(19) - The studies conducted for dedication and management of project yield (3406(b)(2)) identified shortcomings in Sacramento Valley hydrology previously used in long-term studies. These modeling issues are being addressed in other modeling efforts such as those for the CVP Programmatic Environmental Impact Statement (PEIS). The corrected assumptions place a greater need to consider tradeoffs between downstream flow and habitat needs and project deliveries in conjunction with temperature control, particularly during dry periods. The studies for the Trinity River EIS have also pointed out a need to reconcile sensitivities in both quantities and timing of instream flows and diversions to the Sacramento Basin.

Project Title: Red Bluff Diversion Dam Fish Passage Program
CVPIA Section 3406(b)(10)
FY 1999 - $1,529,000

FY 1999 Accomplishments

In FY 1999, the Service completed and submitted to Reclamation for distribution an annual report entitled *Abundance, Food Habits and Life History Aspects of Sacramento Squawfish and Striped Bass at the Red Bluff Diversion Complex, including the Red Bluff Research Pumping Plant (RBRPP), Sacramento River, California, 1994-1996*. This report is found in Volume 4 in the Research Pumping Plant's report series.

The Service continued monitoring juvenile salmonids migrating downstream in the Sacramento River adjacent to the RBRPP by carrying out extensive screw trap and beach seine sampling. They also continued to monitor predators in the vicinity of the pumping plant by angling and electro-fishing to determine if new predator habitat had been created. Adult squawfish were radio-tracked to determine their seasonal and diel movements and behavior near the RBRPP and diversion dam. Late in the year, the Service began radio-tracking adult fall-run chinook salmon to determine movement patterns in the vicinity of RBRPP and the diversion dam.

Reclamation completed and distributed to the Interagency Team an annual report entitled *In-Plant Biological Evaluation of the Red Bluff Research Pumping Plant on the Sacramento River in Northern California: 1995 and 1996*. This report is found in Volume 3 in the Research Pumping Plant's report series.

Reclamation's Research Pumping Plant Evaluation Team (Team) continued its biological and engineering evaluations of the pumping plant throughout the fiscal year. High river levels from El Nino storms precluded operating the pumps until March and again shut the pumps down in May. Therefore, studies scheduled to begin in January were delayed while

others were interrupted or forced to end before the number of scheduled trials were completed (e.g., plant passage trials). The internal helical pump was down for repairs form May through August which precluded doing comparative studies with the two types of pumps. Most of the evaluations conducted during the year were with the two Archimedes pumps.

The Team conducted 68 trials using nearly 2,000 juvenile chinook salmon attained from Coleman National Fish Hatchery (NFH) to evaluate fish passage through the Archimedes pumps. Survival at capture continued to be high for both large (>45mm) and small (<45 mm) chinook salmon. With this year's efforts, pump passage experiments to evaluate the Archimedes pumps are completed. More pump passage experiments are needed, however, to evaluate passage of small chinook salmon through the helical pump. The helical pump was not operable during FY 1998 when small fish were available from Coleman NFH.

Entrainment monitoring of adult and juvenile fish continued during the fiscal year 1999. Nearly 3,000 hours of run time were logged on the three pumps. During this run time, nearly 800 pump hours of entrainment monitoring were conducted. All the data has been entered into a database and is being summarized to evaluate survival, and diel and seasonal patterns of entrainment. Several of the entrainment trials were conducted simultaneously with the Service screw trap monitoring. These data will be analyzed to determine the proportion of wild chinook salmon entrained into the plant.

Trials to determine passage time and survival of juvenile chinook salmon inserted through the pumps and collected at the bypass outfall structure in the Sacramento River were conducted from April 23 through May 7, 1999. Due to high river levels created by El Nino storms, only six trials were conducted. In each trial, 100 treatment and 100 control fish were released into a pump and at a pump effluent, respectively. Passage time and survival was similar between treatment and control fish. Large chinook (> 45 mm) passed through the system quicker and had higher survival than small chinook.

Sampling for larval fish entrained into the plant began in March. Samples were collected biweekly through June, then monthly thereafter. During each biweekly or monthly sampling period, two night, two day, and two crepuscular samples were collected within the same 24 hours. Samples were collected from four nets during each sample time for a total of 264 sampled collected in the fiscal year. Larval fish are being sorted from these samples, then measured and identified to species by Dr. Johnson Wang of National Environmental Services, Concord, California.

During July and August, six trials were conducted to determine the severity and duration (if any) of stress in fish passed through the Archimedes pumps. The internal helical pump was unavailable for these trials. In each trial, treatment fish were passed through the pump while control fish were released at the pump effluent. A sample of 10 treatment and 10 control fish were collected pre-release and at 1, 3, 6, 12, and 24 hours post-release. Blood was collected from each fish and sent to a commercial laboratory for plasma cortisol analysis. In each trial, behavioral observations were also made on treatment and control fish immediately after passage. Parameters observed were schooling, position in the water column, level of activity, and response to light.

Late in the fiscal year, pilot work began on a study to assess colonization of the sump area by predators. A 140 foot long gill net was stretched out between the trashracks and the pump intakes and fished overnight. Four squawfish were captured, measured, and stomach contents preserved. The net will be set at biweekly intervals throughout the year.

Hydraulic and mechanical evaluations of the pumps and facilities continue. Much of the equipment was automated, allowing remote operation and automatic data collection. Sensors are in place which allow for continuous efficiency monitoring, bearing condition, and other operational parameters. Repairs to the flights of the Archimedes pumps last year appear to have been successful. An inspection of the flights on July 21 and 22, 1998, revealed minor cracking. While these cracks have extended to the 4-inch reinforcement plates (2-inches long), no cracks extend through the plates. Pump #1 has one new crack, 1-inch in length and Pump #2 has four additional cracks since the last inspection. They are ½-inch, 3/4-inch, 1-inch, and 1-1/2 inches in length. These cracks may have been latent defects that were not detected or cracks not properly repaired. There are two cracks that remained from the last inspection. There are no plans to repair the cracks at this time, but rather to observe to determine if they continue to propagate.

The WEMCO pump experienced failure to the forward alignment bearing in late April of this year. Repaired by the supplier, the pump was installed the first week of September. The manufacturer believes this failure was the result of conditions outside the pump. These conditions have been resolved and the pump was reassembled with no design changes.

Intensive velocity measurements documented current operational conditions for input into biological studies. The variable speed drive was utilized on the Archimedes pump and velocity measurements revealed the pump could be run at all speeds and the screening criteria could be maintained. In addition, the need for complete baffling in order to meet velocity criteria was demonstrated and fixed baffles (20% open area) were installed behind all screen panels currently not equipped with adjustable baffles. Many parts of the original engineering evaluation plan have been accomplished and up-to-date results will be documented in an upcoming report.

Project Title: Coleman National Fish Hatchery
CVPIA Section 3406(b)(11)
FY 1999 - $3,021,000

FY 1999 Accomplishments

Construction and operation of Shasta Dam resulted in the loss of approximately 187 miles of spawning and rearing habitat for salmonids. Fall and late fall-run chinook salmon and steelhead are produced at Coleman NFH to mitigate for this loss of habitat and the consequent reduction in salmonid populations.

Coleman NFH is located in the lower reach of the Battle Creek watershed. Water quality for anadromous fish is a significant concern to the Coleman NFH because high sediment load and high temperatures can significantly affect operations and fish health. Additionally, Battle Creek contains bacterial, viral, and parasitic pathogens that can affect production. Measures to restore fish runs in Battle Creek above the Coleman NFH are proceeding. These measures, however, were contingent on no adverse temperature effects to the Coleman NFH. After full ozone water treatment is accomplished to remove pathogens

from the water, complete measures to restore the rest of Battle Creek above the Coleman NFH will be initiated. Although additional modifications are necessary, accomplishments in FY 1999 have assisted the construction of the water treatment facility, which will lead to the protection of station production while allowing additional habitat restoration in the Battle Creek watershed.

Contracts were awarded to accomplish the following projects at Coleman NFH: construction of one sand filter and the rehabilitation of another sand filter; install previously acquired ozone equipment; and initiation of Level 1 water treatment with a capacity of 45,000 gallons per minute filtered and 30,000 gallons per minute ozone treated. Level 1 water treatment requires construction of a contactor/stripper structure, distribution channel, pump station in the Coleman Canal, a 54-inch pipeline from the ozone facility to the 15' x 150' raceways and a vehicle bridge over Coleman Canal. Improvements to the Coleman NFH water intake in Battle Creek were started to comply with the 1997 National Marine Fisheries Service (NMFS) fish screening criteria.

Project Title: Clear Creek Restoration
CVPIA Section 3406(b)(12)
FY 1999 - $1,135,000

FY 1999 Accomplishments

A multi-agency team (Team) has been formed and meets regularly, including staff from the Service, Reclamation, Bureau of Land Management (BLM), Natural Resources Conservation Service (NRCS), National Park Service, CDFG, CDWR, California Department of Forestry, Clear Creek Coordination Resource Management Group, NMFS, and Western Shasta Resource Conservation District. The Team is currently focusing on anadromous fish passage at Saeltzer Dam, channel morphology restoration, spawning gravel supplementation, instream flows, and upland erosion control.

The Townsend Flat Water Ditch Company (TFWDC), CDFG, and Reclamation are developing a plan to remove Saeltzer Dam. The plan will provide a framework for TFWDC to exchange their annual water diversion from Clear Creek to a point of diversion from Whiskeytown Dam, in accordance with their pre-1914 appropriative water rights. The amount of water to be exchanged is 6,000 acre-feet annually. Right, title, and interest in Saeltzer Dam will be transferred to Reclamation for its removal. Any associated property easements will revert from TFWDC to CDFG and, after project completion and site restoration, the land will be acquired by BLM. The upstream diversion at Whiskeytown Dam will not require construction of any new instream structure to supply water to TFWDC.

Work on Phase I of the channel restoration process began in September and was completed in October of 1999. Phase I constructed an alluvial plug to eliminate several braided channels that caused stranding of adult and juvenile chinook salmon and steelhead. Design, permitting, and construction costs for Phase I were funded entirely by the CVPIA.

The CVPIA also provided funding to develop a comprehensive CALFED proposal for restoration of the lower Clear Creek channel. The proposal is a four phased approach to restore approximately 12,000 feet of degraded salmonid habitat. Total implementation cost for all four phases is estimated at nearly $6,000,000. The proposal was submitted to

CALFED by the Western Shasta Resource Conservation District which subsequently received $3,500,000 for construction of Phase II. It is estimated that CVPIA will cost share $500,000 of Phase II costs. Phases III and IV (costs of $1,380,231 and $1,048,661, respectively) are presently unfunded. Phases III and IV may be implemented based on adaptive management practices and funding availability.

Clear Creek flows were released as per the *Administrative Proposal for the Dedicated Project Yield* [Section 3406(b)(2)], ranging from 150 to 200 cubic feet per second. FY 1999 was the third year of increased flow releases from Whiskeytown Reservoir to Clear Creek. The Service completed a summer flow experiment to accurately determine the relationships between flow and water temperature in Clear Creek. This information is critical for the reestablishment of steelhead and spring-run chinook salmon.

Existing increased flows in Clear Creek continue to have significant positive impacts on adult chinook salmon escapement. From 1967 to 1991, adult chinook salmon escapement averaged 1,584 fish. During the past three years, increased Clear Creek flows have contributed to an average escapement of 7,930 fish, a 400% increase.

The watershed soil erosion survey and two erosion control projects were completed during the fiscal year.

Project Title: Spawning Gravel/Riparian Habitat Restoration
CVPIA Section 3406 (b)(13)
FY 1999 - $666,000

FY 1999 Accomplishments

Two gravel restoration projects were implemented in 1999; one on the Upper Sacramento River downstream from Keswick Dam, and the other on the American River downstream from Nimbus Dam.

Upper Sacramento River

This project included placing 20,000 tons of spawning-sized gravel along the Sacramento River immediately down river from the confluence with Salt Creek. This gravel replaced gravel washed downstream by earlier high river flows. Fifty pieces of gravel associated with this action had an imbedded coded sonic tag (pinger). The life expectancy of these tags is four years. Within this four year period, gravel movement downstream will be monitored using the radio signals emitted by each tag. This study will help determine the most effective and efficient future placement of gravel for anadromous fish spawning in the Sacramento River.

Lower American River

Gravel restoration efforts were conducted at three sites on the American River downstream from Nimbus Dam: Sailor Bar, Lower Sunrise, and Sacramento Bar.

Sailor Bar - This site suffered from tightly compacted substrate and gravel too large for spawning anadromous fish to move. The project loosened the substrate and added gravel in a range of sizes more suitable for spawning. Chinook salmon were observed spawning in the rehabilitated habitat two months after the project was completed for the fist time in eight years.

Lower Sunrise - This site suffered from a tightly compacted subsurface layer and gravel smaller than optimal for spawning anadromous fish. The substrate was loosened; native gravels were cleansed of fine sediment and clay; and coarser gravel, more suitable for spawning, was added and mixed with native gravel. Similar to the Sailor Bar site, chinook salmon were observed spawning in the rehabilitated habitat for the first time in eight years.

Sacramento Bar - Portions of this site suffered from the presence of excessive fine sediment, substrate compaction, and low permeability of the gravel substrate. The substrate was loosened, native gravels were cleansed of fine sediment and coarser gravels were added and mixed with native gravels. Similar to the other two American River sites, portions of this area that were treated received high use by spawning chinook salmon for the first time in eight years.

Project Title: Comprehensive Assessment and Monitoring Program
CVPIA Section 3406(b)(16)
FY 1999 - $1,498,000

FY 1999 Accomplishments

In FY 1999, the angler survey program with CDFG continued and a long-term hatchery marking plan was developed. Implementation of the plan will require cost sharing with other funding sources. A draft plan for evaluating the success of fish screening was developed in the Winter of 1999, and an annual status report evaluating 1998 data was prepared in the Spring.

A data management program was initiated through the Interagency Ecological Program (IEP), including establishment of a Comprehensive Assessment and Monitoring Program homepage on the Internet at http://www.delta.dfg.ca.gov/reports/cvpia/camp/index.html. Internet access to all of the data was established this fiscal year.

Juvenile chinook salmon were chosen as the indicator species to evaluate the relative effectiveness of action categories in CVPIA, including: water management, habitat restoration, and fish screens and other structure-related activities. Because screw trapping was chosen to be the appropriate choice for sampling this life stage, a screw trapping protocol was developed and trapping was initiated during the fiscal year.

Project Title: Anderson-Cottonwood Irrigation District Diversion Dam
CVPIA Section 3406(b)(17)
FY 1999 - $15,000

FY 1999 Accomplishments

The main dam for the Anderson-Cottonwood Irrigation District (ACID) Diversion Dam has two fish ladders; one at Caldwell Park, built in 1929, and the other installed in 1991 as a temporary solution pending major improvement of the Caldwell Park ladder. The Caldwell Park ladder is old, decaying and undersized. Three miles of the Sacramento River lie between ACID and Keswick Dam, the uppermost limit of anadromous salmonid passage and spawning areas for the endangered winter-run chinook salmon. The ACID main canal fish screen is old and nearing the end of its project life. In addition, the screen is relatively lightweight with breakaway sections to insure the entire screen is not lost when clogged

with debris. When these sections breakaway, fish are subject to entrainment and death in associated irrigation systems.

A fish passage team containing engineers and biologists from the Service, NMFS, Reclamation, CDFG, CDWR, ACID, and Ch2M Hill managers designed state-of-the-art fish ladders and fish screens for ACIDs main diversion. A $325,000 grant from CALFED was used to produce final designs for the fish ladders. In July, ACID solicited $860,000 from CALFED for fish screen final designs and to finish environmental permitting. Construction began early in the fiscal year as a result of the availability of the CALFED grant and the receipt of construction funding.

New fiberglass dam boards and a catwalk were installed, allowing ACID to install, operate and remove their Sacramento River main dam, and avoid dewatering redds and stranding juvenile salmonids. The new boards worked well and ACID has not requested Reclamation to reduce flows to accommodate dam board manipulation, eliminating juvenile stranding this fiscal year. Evaluation of the effectiveness of the these measures will continue in the next few years.

The preferred alternatives for two fish ladders and the new fish screen were selected by the ACID Fish Passage Team.

The Service continues to assess the effectiveness of the Caldwell Park fish ladder. The assessment includes the use of an electronic fish counting weir and a video camera to count chinook salmon and steelhead. Approximately 5,000 salmon and steelhead used the Caldwell Park ladder in the Summer and Fall, and 1,000 salmon used the ladder in the Spring.

Project Title: Hamilton City Pumping Plant Fish Facility
CVPIA Section 3406(b)(20)
FY 1999 - $16,450,000

FY 1999 Accomplishments

In FY 1999, construction activities associated with the Hamilton City Pumping Plant Fish Facility continued, resulting in completion of the fish screen extension and exit channel modifications, including the training wall. The cost sharing agreement with Glenn-Colusa Irrigation District (GCID) was fully executed and the agreement for the Gradient Facility (GF) between GCID and the Corps of Engineers (Corps) was drafted. All permits have been acquired and National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) compliance was completed. Mitigation for the fish screen and the mitigation plan for the GF were completed. Lands are being acquired for the GF mitigation and a planting contract was drafted. An on-site environmental monitor was contracted to monitor the entire construction site. Designs for the remaining features such as screen sweeps, dredge dock, and shop building relocations are at least 90% complete. Final design of the GF was completed. The Corps expects to begin construction in December of 1999 by advertising a construction contract. Total project construction is expected to be completed in the Fall of 2001, followed by a three-year initial testing/optimization program. At GCID's request, Reclamation shifted construction responsibility for retrofitting the existing fish screen to the fish screen extension contract by contract modification on May 25, 1999. Excavation of the pumping plant forebay was also shifted from GCID to Reclamation.

GCID awarded a contract for installing the three 84-inch Reclamation furnished bypass pipelines. Congress authorized the bank protection work at River Mile 208 to be included in this project to ensure the GF is not outflanked by river meandering. This bank protection work is to repair existing bank protection damaged during recent flooding.

Reclamation and GCID completed the final joint State-Federal Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and acquired all permits for construction in the river oxbow. Reclamation awarded construction contracts for the fish screen extension to Shimmick Construction, and to Skyline Steel for cofferdam sheetpiling. GCID awarded contracts to J. Arnaz Tree Service for transplanting Elderberry shrubs and to Nordic Industries for furnishing, delivering, and placing riprap in the exit channel. The Corps completed and is testing a hydraulic physical model of the GF, using facilities at Colorado State University. About 45 elderberry shrubs were transplanted from the fish screen extension area to an adjacent mitigation site.

Project Title: Anadromous Fish Screen Program
CVPIA Section 3406(b)(21)
FY 1999 - $3,782,000

FY 1999 Accomplishments

A document titled, *Anadromous Fish Screen Program-Program Description* (AFSP) was finalized this fiscal year. The document, finalized and distributed to the public, explains the program and offers guidelines on program participation.

In order to assist the program, two documents were prepared: one on O&M and monitoring, and the other on environmental documentation guidelines. These documents, furnished to attract additional participants to the program, were provided to diverters in high priority areas, including operators of large diversions in more sensitive waterways of the Central Valley.

The AFSP provided cost-share funds for the following fish screen, and fish screen/ladder projects:

- Princeton-Codora Glenn/Provident Irrigation Districts (under construction)
- Reclamation District 108 (under construction)
- Reclamation District 1004 (under construction)
- Browns Valley Irrigation District (construction complete, hydraulic evaluation pending)
- Gorrill Fish Screen and Ladder Project (construction complete, hydraulic evaluation pending)
- Rancho Esquon (Adams Dam) Fish Screen and Ladder Project (under construction)
- Suisun Resource Conservation District Implementation Studies (completed)
- City of Sacramento Screened Diversion Project (feasibility study and environmental compliance initiated for one diversion on the Sacramento River)

Project Title: Agricultural-Waterfowl Incentive Program
CVPIA Section 3406(b)(22)
FY 1999 - $997,000

FY 1999 Accomplishments

In FY 1999, as in FY 1996 through 1998, announcements were mailed to the public to generate interest and participation in the Agricultural-Waterfowl Incentive Program. In 1996, the first year the program was offered, over 90 farmers submitted proposals. These proposals were reviewed to determine basic program eligibility and 41 landowners were found to be eligible. Cooperative Agreements were executed that created 22,314 acres of habitat for wintering migratory waterfowl and possible enhancement of CVP water supplies. With the assistance of Ducks Unlimited, the participating properties were monitored during the Winter of 1997-98 and shown to have heavy use by wintering waterfowl. In April of 1998, a similar program announcement was mailed to 450 media and agency contacts. Program interest grew, and in 1998 forty-five eligible landowners were provided incentives, creating 39,933 acres of Fall and Winter waterfowl habitat on agricultural fields within the CVP Service Area. In the Winter of 1999-2000, sixty-one landowners participated for a total of 53,450 acres.

Sacramento Valley rice farmers, making up a majority of program participants, not only provided valuable waterfowl habitat but also gained assistance in meeting their need for more appropriate rice straw decomposition.

A participating landowner in the Tulare Lake Basin flooded his wheat and barley crop in late Summer in order to create crucial habitat for early migrating ducks and to adequately control damage caused by black root rot.

Tens of millions of bird-use days were recorded on participating properties this fiscal year, with up to 40,000 birds recorded using individual fields at any one time. Waterfowl habitat created by this program is crucial to the feeding and resting needs of many species of wintering waterfowl. This quality habitat supplements that existing on nearby refuges and private duck clubs and serves to reduce the threat and extent of avian disease by reducing the high concentrations of birds for long periods of time at one location.

Project Title: Stanislaus River Basin Water Needs
CVPIA Section 3406(c)(2)
FY 1999 - $113

FY 1999 Accomplishments

The Stanislaus River Basin Water Needs investigation supports efforts associated with the New Melones Long Term Operation Plan. As a result of a stakeholder workshop held in April of 1997, an Interim Operation Plan for the New Melones/Stanislaus River was initiated and went into effect in October of 1999. In addition, Interior is leading a stakeholder based process seeking agreement on the long term operation of New Melones Dam and the Stanislaus River.

The process of developing a long term operation plan will be put on hold pending the outcome of other actions effecting the Stanislaus River. The stakeholder process

continued throughout the fiscal year with a focus on the development of a new interim agreement for water years 2000-2001.

By the end of the fiscal year, five stakeholder's meetings and one meeting with each of the six issue structured technical task forces were held. The technical task forces explored the following issues: reservoir operations, water temperature monitoring and control, in-channel flow impacts, fishery biology, conjunctive use of ground and surface waters, and legal and institutional issues. Operation options were solicited and prioritized to match the scope of the operation plan.

Project Title: Refuge Water Supply Program
CVPIA Section 3406(d)(1-5)
FY 1999 - 16,730,000

FY 1999 Accomplishments

The Refuge Water Supply Program implementation projects are divided into five separate geographic areas: West Sacramento Valley Study Area, East Sacramento Valley Study Area, San Joaquin Basin Action Plan Lands/Grasslands Study Area, Mendota Water Authority, and South San Joaquin Valley Study Area.

West Sacramento Valley Study Area

Pursuant to requirements of NEPA and the CEQA, the Final EA/IS and corresponding FONSI/Neg Dec was completed and signed for the Sacramento, Delevan, and Colusa National Wildlife Refuges (NWR) (collectively referred to as the Sacramento NWR Complex) in February of 1998. Implementation of the recommended alternative is proceeding. Negotiations on a long-term conveyance agreement are substantially complete with the Glenn-Colusa Irrigation District to convey water to the Sacramento NWR Complex and improve district facilities for that purpose. These agreements were executed in September of 1998. Construction of the Stony Creek Siphon, a critical feature to providing the Sacramento NWR Complex water supplies using Glenn-Colusa Irrigation District facilities, was completed in December of 1998. The environmental commitments made in the EA/IS, Endangered Species Act (ESA) Biological Opinion for the Stony Creek siphon, and permit conditions were completed in the Spring of 1999.

A programmatic consultation under Section 7 of the ESA for the remaining features of the recommended alternative was completed.

East Sacramento Valley Study Area

The Final EA/IS for Gray Lodge Wildlife Area (WA) and Sutter NWR was finalized in December of 1997. The corresponding FONSI/Neg Dec was signed in August 1998. Consultation under Section 7 of ESA for the recommended alternative was completed in the Spring of 1999. Negotiations for long-term conveyance agreements, as part of the recommended alternative, began in Fall of 1998 with the appropriate water purveyors and is on-going.

San Joaquin Basin Action Plan (SJBAP) Lands/Grassland Study Area

During formulation of conveyance alternatives for this area, the Service, CDFG and Reclamation made the determination that the Island C canal was necessary to service the San Luis NWR and the Newman Canal was necessary to service the China Island Unit of

the Grasslands Water Authority. It was felt that both facilities could be built without jeopardizing the determination in the EA due to their independent utility. These conveyance facilities were pursued on an independent, parallel track. Corresponding NEPA/CEQA documentation was completed for both canals.

Design work continued for the construction and/or rehabilitation of refuge conveyance facilities to be implemented in a phased program over the next two years.

The Newman Canal was constructed in the Summer and Fall of 1997 and deliveries were made in the Spring of 1998. The canal then suffered a major failure with 2 to 5 miles of canal possibly needing reconstruction. An investigation by an independent review team determined the cause of failure to be an inadequate foundation. An effort is now underway to determine if the current alignment is adequate, or if an alternate alignment would be more feasible.

Mendota Wildlife Area

The public review and comment period for the final EA/IS for Mendota WA expired in the Summer of 1998. The final EA/IS is being revised based on the comments received during the public review process. Consultation under Section 7 of the ESA for the recommended alternative was completed by the Spring of 1999. Implementation negotiations began with the Central California Irrigation District in the Spring of 1999 to implement the recommended alternative, replacement of the Mendota Dam.

South San Joaquin Valley Study Area

The Draft NEPA/CEQA document for the South San Joaquin Valley Study Area was completed in April of 1997. The final NEPA/CEQA document was completed in September of 1999. Consultation under Section 7 of the ESA for the recommended alternative was completed in the Spring of 1999.

Interim Wheeling: During the implementation planning phase, Interior and CDFG have relied upon pre-CVPIA and interim conveyance agreements to “wheel” water to certain wildlife refuges until long-term contracts are negotiated. These “interim” agreements are in place with Biggs-West Gridley Water District to serve Gray Lodge WA and Buena Vista Water District and CDWR to serve Kern NWR.

Water Service Agreements: Interior developed a time line for the negotiation of the water service agreements and supporting environmental compliance documents to meet the Administrative Solutions Paper target of April 1999. Of primary concern is the relationship/dependancy of the action to the CVPIA PEIS and the level of environmental compliance necessary for the proposed action(s). The agreements will be negotiated in a public setting in accordance with Reclamation policy.

State Cost Share: Sections 3406(d)(3) and (5) of the CVPIA mandate a State cost-share of 25% on Level 4 incremental conveyance and water supply costs be recovered through “direct reimbursement or equivalent in-kind contributions.” Task orders for the West Sacramento Valley refuges and the China Island Unit of the SJBAP have been developed and are being reviewed.

Implementation plans have been developed proposing schedules, funding, and lead agencies offices and districts for implementation tasks (specific actions). A contract was

awarded for the Stony Creek Siphon project--a critical feature for providing full long-term water supples to the West Sacramento Valley Refuges. The Island C Canal servicing the West Bear Creek Unit on the San Luis NWR, and the Newman Canal and "J" Open Lateral servicing the China Island Unit of the North Grasslands WA were completed. A contract was completed for the "J" Pumping Plant and Pipeline to provide service to the China Island Unit.

Agreements were executed with the San Luis Canal Company, Central California Irrigation District, and Grassland Water District to convey water to the SJBAP Lands and improve district facilities.

Project Title: Ecosystem and Water System Operations Models
CVPIA Section 3406(g)
FY 1999 - $6,308,000

FY 1999 Accomplishments

The joint hydrology for the new CALSIM model development was completed. CALSIM is a model under development with CDWR and is designed to replace the separate water resources planning models currently used by CDWR and Reclamation. This new hydrology was completed in conjunction with CDWR and reflects data developed to work on the new joint schematic for CALSIM. This shared effort with CDWR represents a very efficient model development process with a much lower overall cost than separate model development by each agency.

Progress was made in developing an integrated modeling environment for PROSIM and other FORTRAN models used in CVP water modeling. This goes toward meeting the assigned goal of providing easier to use and more generally available models.

A 12 year agreement was executed in FY 1999 that provides for water to support the Vernalis Adaptive Management Plan (VAMP). In FY 1999, this resulted in application of 15,000 acre-feet to improve Spring flows on the Stanislaus River and 37,500 acre-feet to supplement existing Spring flows at Vernalis (these quantities are included on the table in section 3406(b)(3)).

Project Title: Land Retirement Program
CVPIA Section 3408(h)
FY 1999 - $1,440,000

FY 1999 Accomplishments

The Land Retirement Program (LRP) was developed in concert with habitat restoration and other CVPIA purposes. The program goal is to retire agricultural lands with poor drainage and convert the lands to wildlife habitat where appropriate, resulting in overall benefits for the ecosystem. The program is expected to contribute to the resolution of drainage problems, improve water quality, increase water availability, improve quality of wetland habitat, and possibly assist in the recovery of listed species.

Reclamation, the Service, and BLM have developed a voluntary interim LRP to buy land poorly suited for agricultural uses from willing sellers. Stressing adaptive management, the

program established a pilot program, the Land Retirement Demonstration Project (LRDP). The goals of the LRDP are to study the impacts of land retirement on groundwater levels, groundwater and surface water quality, soil chemistry, and biota. The LRDP will evaluate and determine the most appropriate, effective, and economic means to provide upland habitat and possibly aid the recovery of threatened and endangered species in the San Joaquin Valley. After completion of the 3- to 5-year demonstration program, the accumulated information will be used to conduct an ecological risk assessment and complete a programmatic NEPA document, leading to establishment of a long-term program.

Implemented Land Retirement Demonstration Project (LRDP): Sterile barley was planted on twenty LRDP plots, 40 acres each, to help control weeds. Pitfall trap lines were established and baseline surveys completed. Bird transects, spotlighting, mammal trapping and plant surveys were completed and repeated as described in the monitoring plan. Animal and plant samples were collected for selenium sampling and sent to the laboratory for analysis. Statistical review of study design was accomplished.

Phase 1 Environmental Site Assessments: In conformance with the *American Standards of Testing Materials Standard E 1527-97* and Department of the Interior Policy, Phase 1 Environmental Site Assessments were completed for acquisition of approximately 6,000 acres of agricultural property.

Feasibility Study of Panoche-Silver Creek Corridor Project: A feasibility study demonstrated the Panoche-Silver Creek Corridor Project was too costly and not capable of providing significant flood control benefits without other Federal, State or local partners.

Groundwater Modeling Study: A groundwater modeling study of various land retirement scenarios within the Westlands Water District (WWD) was completed. This study will serve a as planning aid for future land retirement within WWD.

Informational Presentations to County Board of Supervisors: Presentations were given to the Fresno, Tulare and Kings County Board of Supervisors. Their comments were subsequently incorporated in the Environmental Analysis.

Quality Assurance Plan: A Quality Assurance Plan (QAP) for implementing the monitoring of soil, groundwater, and surface water in the LRDP site was completed. A monitoring well network was installed and quarterly monitoring of groundwater levels was initiated. Baseline soil samples were collected and soil chemistry was analyzed.

Acquisition Activity: Appraisals for the purchase of 8,000 acres in the Tulare subarea were completed. Within the LRDP area, two appraisals were updated and an additional sixty acres were identified for purchase in WWD. The purchase was subsequently recorded on October 26, 1999.

Environmental Assessment: In December of 1999, Reclamation, the Service, and BLM released an EA/ FONSI for the 15,000 acre LRDP area.

Section 7 Consultations: Formal consultation under the ESA was initiated with the Service for the 15,000 acre LRDP area.